Having the described the invention, I claim:

1. A nucleic acid specific for use in detecting and differentiating *Salmonella* from other bacteria, said nucleic acid comprising at least 10 contiguous nucleotides and being capable of selectively hybridizing to at least a portion of the *prg* gene of *Salmonella*.

2. The nucleic acid of claim 1 being capable of selectively hybridizing to at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

3. The nucleic acid of claim 1 being derived from the *prg* gene of *Salmonella*.

4. The nucleic acid of claim 1 being derived from at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

5. The nucleic acid of claim 1 comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 6-9, a sequence complementary to SEQ ID NOs: 6-9, a sequence substantially similar to SEQ ID NOs: 6-9, a sequence substantially similar to a sequence complementary to SEQ ID NOs: 6-9, and a fragment of SEQ ID NOs: 6-9, a sequence complementary to SEQ ID NOs: 6-9, or a sequence substantially similar to SEQ ID NOs: 6-9, a sequence substantially similar to a sequence complementary to SEQ ID NO: 6-9 that specifically hybridizes to *prg* gene of *Salmonella*.

6. An oligonucleotide primer specific for use in detecting and differentiating *Salmonella* from other bacteria, said primer comprising at least 10 contiguous nucleotides and being capable of selectively hybridizing to at least a portion of the *prg* gene of *Salmonella*.

7. The oligonucleotide primer of claim 6 being capable of selectively hybridizing to at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

8. The oligonucleotide primer of claim 6 being derived from the *prg* gene of *Salmonella*.

9. The oligonucleotide primer of claim 6 being derived from at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

10. The oligonucleotide primer of claim 6 comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 6-7, a sequence complementary to SEQ ID NOs: 6-7, a sequence substantially similar to SEQ ID NOs: 6-7, a sequence substantially similar to a sequence complementary to SEQ ID NOs: 6-7, and a fragment of SEQ ID NOs: 6-7, a sequence complementary to SEQ ID NOs: 6-7, or a sequence substantially similar to SEQ ID NOs: 6-7, a sequence substantially similar to a sequence complementary to SEQ ID NO: 6-7 that specifically hybridizes to *prg* gene of *Salmonella*.

11. The oligonucleotide primer of claim 6, wherein the oligonucleotide primer comprises a pair of nucleic acid sequences which flank a target nucleotide sequence of *Salmonella*.

12. The oligonucleotide primer of claim 3, wherein the pair of nucleic acid sequences includes SEQ ID NO: 6 and SEQ ID NO: 7.

13. An oligonucleotide hybridization probe specific for use in detecting and differentiating *Salmonella* from other bacteria, said probe comprising at least 10 contiguous nucleotides and being capable of selectively hybridizing to at least a portion of the *prg* gene of *Salmonella*.

14. The oligonucleotide hybridization probe of claim 13 being capable of selectively hybridizing to at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

15. The oligonucleotide hybridization probe of claim 13 being derived from the *prg* gene of *Salmonella*.

16. The oligonucleotide hybridization probe of claim 13 being derived from at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

17. The oligonucleotide hybridization probe of claim 13, wherein said nucleic acid sequence is labeled with a detectable moiety.

18. The oligonucleotide hybridization probe of claim 17 wherein the detectable moiety is a fluorescent label.

19. The oligonucleotide hybridization probe of claim 13 wherein the oligonucleotide hybridization probe is detectable by fluorescence resonance energy transfer.

20. The oligonucleotide hybridization probe of claim 13 comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 8-9, a sequence complementary to SEQ ID NOs: 8-9, a sequence substantially similar to SEQ ID NOs: 8-9, a sequence substantially similar to a sequence complementary to SEQ ID NOs: 8-9, and a fragment of SEQ ID NOs: 8-9, a sequence complementary to SEQ ID NOs: 8-9, or a sequence substantially similar to SEQ ID NOs: 8-9, a sequence substantially similar to a sequence complementary to SEQ ID NO: 8-9 that specifically hybridizes to *prg* gene of *Salmonella*.

21. The oligonucleotide primer of claim 13, wherein the oligonucleotide primer comprises a pair of nucleic acid sequences which flank a target nucleotide sequence of *Salmonella*.

22. The oligonucleotide hybridization probe of claim 21, wherein the pair of nucleic acid sequences includes SEQ ID NO: 8 and SEQ ID NO: 9.

23. A method of detecting the presence of *Salmonella* in a sample, said method comprising the steps of:

providing a sample suspected of including *Salmonella*;

amplifying a target nucleotide sequence using an oligonucleotide primer, the target nucleotide sequence comprising at least a portion of the *prg* gene of *Salmonella*; and

contacting the amplified target nucleic acid with an oligonucleotide hybridization probe which is capable of hybridizing to the amplified target nucleotide sequence.

24. The method of claim 23 wherein said amplifying step is performed using polymerase chain reaction in a rapid temperature cycler.

25. The method of claim 23 wherein the amplified target nucleotide sequence is detected by fluorescence.

26. The method of claim 23 wherein the amplified target nucleotide sequence is detected by at least on fluorescently labeled oligonucleotide hybridization probe.

27. The method of claim 23 wherein the amplified target nucleotide sequence is detected by two oligonucleotide hybridization probes, each labeled with a fluorescent moiety, such that when both probes are hybridized to the target nucleotide sequence, fluorescence resonance energy transfer occurs between the fluorescent moieties.

28. The method of claim 27 wherein the oligonucleotide hybridization probe comprises a nucleic acid sequence that is derived from at least one of SEQ ID NO: 1, SEQ ID NO: 3, and SEQ ID NO: 4.

29. The method of claim 27 wherein the pair of oligonucleotide hybridization probes comprises, respectively, SEQ ID NO: 8 and SEQ ID NO: 9.

30. A kit for use in detecting *Salmonella*, said kit comprising at least one of:

a primer comprising at least 10 contiguous nucleotides and being capable of selectively hybridizing to at least a portion of the *prg* gene of *Salmonella*; and

a nucleic acid hybridization probe comprising at least 10 contiguous nucleotides and being capable of selectively hybridizing to at least a portion of the *prg* gene of *Salmonella*.